What is claimed is:

1. A method for determining the centroid (V_c) of a waveform signal indicating how a system responds to an input signal as the value of the input signal is varied over a predetermined range, the waveform being sampled at a set of parameter values (V_i, i=1, ..., n) yielding a corresponding set of sampled amplitudes (A_i, i=1, ..., n), each parameter value and corresponding amplitude forming a sampled point (V_i, A_i), comprising the steps of:
   a) selecting an amplitude at which to create an interpolated point;
   b) interpolating a first parameter value corresponding to the amplitude selected in step (a); and
   c) performing a centroid calculation using only the sampled points with an amplitude greater than a predetermined threshold.

2. The method of claim 1 wherein the amplitude selected in step (a) is less than approximately twenty per cent of the maximum sampled amplitude.

3. The method of claim 1 wherein the centroid V_c is calculated using as a formula:

$$V_c = \frac{\sum_{i=1}^{n} V_i A_i}{\sum_{i=1}^{n} A_i},$$

in which A_i is an amplitude of the waveform and V_i is a corresponding physical parameter on which the amplitude of the waveform depends.

4. The method of claim 1, wherein the waveform is sampled in the presence of background noise, and the method further comprises the steps of:

d) estimating the background (B_i) for each value in the set of parameter values at which sampling is performed; and

e) reducing the amplitude (A_i) of each sampled amplitude by the background (B_i) so estimated.

5. The method of claim 1, wherein among the sampled amplitudes there is a maximum sampled amplitude, and wherein the method further comprises the step of interpolating a second parameter value to correspond to the amplitude selected in step (a), the second value on the opposite side from the first interpolated value of the maximum sampled amplitude.

6. An apparatus for determining the centroid (V_c) of a waveform signal indicating how a system responds to an input signal as the value of the input signal is varied over a predetermined range, the waveform being sampled at a set of parameter values (V_i, i=1, ..., n) yielding a corresponding set of sampled amplitudes (A_i, i=1, ..., n), each parameter value and corresponding amplitude forming a sampled point (V_i, A_i), the apparatus comprising:

a) means for selecting an amplitude at which to create an interpolated point;

b) means for interpolating a first parameter value corresponding to the selected amplitude; and

c) means for performing a centroid calculation using only the sampled points with an amplitude greater than a predetermined threshold.

7. The apparatus of claim 6, wherein the selected amplitude is less than approximately twenty per cent of the maximum sampled amplitude.

8. The apparatus of claim 6, wherein the centroid (V_c) is calculated using as a formula:

$$V_c = \frac{\sum_{i=1}^{n} V_i A_i}{\sum_{i=1}^{n} A_i},$$

in which A_i is an amplitude of the waveform and V_i is a corresponding physical parameter on which the amplitude of the waveform depends.

9. The apparatus of claim 6, wherein the waveform is sampled in the presence of background noise, and the apparatus further comprises:

d) means for estimating the background (B_i) for each value in the set of parameter values at which sampling is performed; and

f) means for reducing the amplitude (A_i) of each sampled amplitude by the background (B_i) so estimated.

10. The apparatus of claim 6, wherein among the sampled amplitudes there is a maximum sampled amplitude, and the apparatus further comprises means for interpolating a second parameter value to correspond to the selected amplitude, the second value on the opposite side from the first interpolated value of the maximum sampled amplitude.